Heart failure management in Polish medical centers during the coronavirus disease 2019 pandemic: results of a survey

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Introduction On March 11, 2020, the World Health Organization declared the outbreak of coronavirus disease 2019 (COVID-19) to be a pandemic.[1] Since March 4, 2020, 36155 Polish patients were infected by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[2] The risk of SARS-CoV-2 transmission may be higher in patients with heart failure (HF) and also increased due to comorbidities and advanced age.[3] In the current European Society of Cardiology *Guidance for the diagnosis and management of cardiovascular disease during the COVID-19 pandemic*, it is recommended to refrain from hospital visits and to use guideline-directed medical therapy and telemedicine, whenever possible, to follow up stable patients with HF.[3] During the COVID-19 pandemic, Jiménez-Blanco Bravo et al[4] showed a 56.5% reduction in the number of emergency room visits and a 46.9% reduction in hospital admissions of patients with HF in Spain. Similarly, Bromage et al[5] confirmed fewer HF patient admissions to cardiology units in 2020 compared with 2019 in the United Kingdom (23% vs 37%, respectively), and the patients admitted during the COVID-19 pandemic presented with a higher New York Heart Association (NYHA) class and severe peripheral edema.

This study aimed to obtain data on the care of patients with HF in Polish medical centers during the COVID-19 pandemic.

Methods We developed a survey and sent it by email in June 2020 to most Polish medical centers that provide HF treatment. Thirty-six questionnaires were completed. Medical centers differed regarding the referral level—academic or nonacademic (provincial, district, or regional). The survey was anonymous, voluntary, conducted electronically, and regarded the first 3 months of the pandemic. It included 26 single- or multiple-choice questions. Only a single respondent or a person authorized by them was allowed to fill in the questionnaire in each center. Additional bioethics committee approval was not required.

Statistical analysis The obtained data were subjected to statistical analysis. Categorical variables were presented as percentages. Statistical significance for individual study groups was not evaluated.

Results and discussion Selected results of the survey are presented in TABLE 1. The questionnaire was completed by 18 academic and 18 nonacademic centers, including 5 outpatient clinics and 5 private healthcare centers. In 89% of the centers, a cardiology outpatient clinic was available on site. According to the reported data, the number of hospitalizations due to HF in academic, provincial, or district centers was lower during the pandemic than earlier, while in regional centers somewhat similar to that noted before the pandemic. The centers widely offered teleconsultations (83%); in-person visits, if necessary, were scarce (5.5%), regardless of

TABLE 1 Selected healthcare components in 36 Polish medical centers during the coronavirus disease 2019 outbreak according to the referral level, based on a survey (continued on the next page)

	Academic centers (n = 18)	Nonacademic centers (n = 18)
Center characteristic		
Inpatient clinic	15	11
Outpatient clinic	3	2
Private healthcare center	–	5
Unit profile		
Cardiology	18	10
Internal medicine	–	3
Primary healthcare	–	5
Patients diagnosed with acute HF per week before the pandemic, n		
>10	2	4
5–10	7	5
0–5	9	9
Hospitalizations due to acute HF during the pandemic, n		
As many as before the pandemic	6	8
Less than before the pandemic	10	9
No such hospitalizations	2	1
Drugs prescribed during teleconsultations (e-prescriptions)		
ACEI	18	15
ARB	9	9
ARNI	4	3
β-Blocker	16	15
MRA	11	10
Loop diuretic	16	18
Ivabradine	2	4
Digoxin	–	2
Patients in whom new drugs were administered, %		
>10	1	1
5–10	2	3
<5	8	6
No new drug administration	7	8
Patients in whom the treatment was modified, %		
>10	7	4
5–10	3	6
<5	8	5
No treatment modification	–	3
Electrotherapy procedures		
ICD	15	5
CRT	11	5
Ablation	10	3
Suspended	1	2
Not applicable (noninvasive center)	2	11

TABLE 1 Selected healthcare components in 36 Polish medical centers during the coronavirus disease 2019 outbreak according to the referral level, based on a survey (continued from the previous page)

	Academic centers (n = 18)	Nonacademic centers (n = 18)
Remote CIED monitoring		
Yes	9	4
No	9	14
Interventional cardiac procedures (ICA, PCI)		
Performed like before the pandemic	6	5
Occasional	10	–
Suspended	–	1
Not applicable (noninvasive center)	2	12

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; ARNI, angiotensin receptor neprilysin inhibitor; CIED, cardiac implantable electronic device; CRT, cardiac resynchronization therapy; ICA, invasive coronary angiography; ICD, implantable cardioverter-defibrillator; MRA, mineralocorticoid receptor antagonist; NOAC, non–vitamin K oral anticoagulant; PCI, percutaneous coronary intervention; VKA, vitamin K antagonist

the center referral level. These 2 forms of visits were not available in 11% of the centers.

Additional diagnostic procedures such as echocardiography, 24-hour electrocardiogram monitoring, cardiac magnetic resonance, or cardiac computed tomography angiography were used in 72% of the centers, but mainly in non-new patients with chronic HF. In general, invasive procedures were performed less frequently than before the pandemic.

A teleconsultation for new patients with HF as the only form of medical visit was provided in 33% of the centers. Before teleconsultations were implemented, up to 5% of the HF population was hospitalized due to HF decompensation in the pandemic period. Although, at the time of the use of teleconsultations, in 64% of the centers, patients required referral to a hospital due to HF exacerbation.

In 92% of the centers, e-prescriptions were issued. The most commonly prescribed drugs were: loop diuretics (torasemide, furosemide), angiotensin-converting enzyme inhibitors, and β-blockers, whereas the least popular prescribed drugs included: angiotensin receptor neprilysin inhibitors, ivabradine, and digoxin (TABLE 1). Peripheral edema was the most critical symptom for the modification of diuretic treatment. Of note, both angiotensin receptor neprilysin inhibitors and ivabradine were administered only in the cardiology units of regional or academic centers, and digoxin was administered both in the cardiology units and primary healthcare clinics of district centers. In 42% of the centers, patients' therapy was not modified.

Switching from vitamin K antagonists to non–vitamin K oral anticoagulants was unexpectedly rare (10/36) and more common in provincial (2/3) and district (4/7) rather than in academic or regional centers (4/26). The low switching rate might result from contraindications to such therapy modification (eg, mechanical valve prosthesis), as well as from a limited access to laboratories and data on serum creatinine levels and international normalized ratio before switching from vitamin K antagonists to non–vitamin K oral anticoagulants.

Surprisingly, the question less frequently asked to assess the patient's clinical status concerned their body weight (25/36), while questions regarding the NYHA status, edema of lower extremities, or blood pressure and heart rate were more frequent (32/36, 34/36, and 33/36, respectively).

Finally, patient education regarding HF management was provided in 69% of the centers and conducted by physicians (92%) or nurses (8%, only in academic centers). Educators relied on their knowledge (100%), and additional tools, such as web pages or mobile phone applications, were rarely used (32%). Among the surveyed centers, 86% expressed concern about the negative impact of the pandemic on the HF population, while 61% indicated that teleconsultations would partially replace in-person visits after the pandemic.

Limitations Our study had some limitations. First, it included a relatively small number of centers nationwide. Next, it was focused on general trends in HF management in certain centers, and not on patient-centered care. The study also regarded only the first 3 months of the pandemic and did not determine the long-term impact of the pandemic on HF prognosis. Also, the survey did not cover all issues related to the care of HF patients (eg, exercise, rehabilitation). Admittedly, it might be much more broadly elaborated in an original research article.

Conclusions The epidemiological situation seems to be unpredictable, and the pandemic appears to be long-lasting. Teleconsultations,

mobile phone applications, and self-monitoring play a key role during the COVID-19 outbreak.[6] The presented results of the HF survey carried out in Polish centers are similar to those obtained in other European countries. Following the national lockdown and social distancing restrictions, a lower access to healthcare and highly specialized procedures in patients with HF and a decrease in the number of hospitalizations due to acute HF might have an impact on HF prognosis. Similarly, Legutko et al[7] reported a decline in the number of coronary angiography and percutaneous coronary intervention procedures in Polish patients with myocardial infarction during the COVID-19 pandemic.[7] It might lead to a rapid increase in the HF burden in Poland.

ARTICLE INFORMATION

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CONFLICT OF INTEREST None declared.

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